

Application No.: 10/026,171

Response dated: December 15, 2008

Reply to Final Office Action of: October 24, 2008

### REMARKS

Reconsideration of the present claims is respectfully requested.

Claims 1, 3, 5-10, 14-22, and 24-38 are pending. Claims 2, 4, 11, 12, 13, and 23 were previously cancelled.

Applicants wish to thank Examiner for removal of the rejection of the claims based on Razavi.

#### **Rejections Under 35 USC § 103**

The Action has maintained the rejection of Claims 1, 3, 5-10, 14-22 and 24-38 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,420,501 to Uwai (herein "Uwai"). Uwai is alleged to disclose in Table 1 that the metallocenes and activator can be combined at temperatures up to 100°C and for times up to 60 minutes. The Action further alleges that Applicants' step (b) is suggested although Uwai discloses a temperature of 100°C. Applicants respectfully disagree.

The Comparative Examples in Uwai, CEx-4 and CEx-5 of Table 1, which were heated to 100°C for 60 minutes disclose activities of 83 and 750 respectively. Applicants presently claimed invention directly compares to these examples except the temperature differences, and yet results in a disclosed activity of 3000. Accordingly, Uwai fails to suggest Applicants recited step which is demonstrated to improve the activity of the catalyst, but instead teaches that heating of the catalyst with the support results in a drastic reduction in activity of over 2000 units, effectively destroying the activity of the catalyst composition.

Uwai also fails to disclose or suggest combining the heated catalyst/activator mixture with a pre-heated support, but instead merely discloses heating of the combined materials. As such, Uwai fails to disclose or suggest all of Applicants' recited limitations and in fact, actually teaches away from the presently claimed invention.

The Action notes "[w]ith respect to the temperature of step (b) of 30-75 C. It is noted that Uwai teaches a temperature for this step of 100 C, although this temperature is 25 C higher, the claimed temperature would have been the result of routine experimentation by one of ordinary

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skill in the art in an effort to optimize the catalyst activity while reducing reactor fouling by taking into consideration the polymerization parameters (i.e. time, temperature, reactor type, pressure, etc.). It is further noted however that the addition of one component that is up to 125 C to another components that is up to 75 C, will result in a new composition with a temperature higher than 75 C, assuming equal heat capacities and equal volume solutions the resultant temperature would actually be 100 C.

Applicants recite step (b) of combining the two materials which are each within particular temperatures ranges. Applicants do not recite a final temperature in step (b), but require the two components which are mixed to be within the recited temperature ranges, which, in combination with recited Step (a), unexpectedly results in an improvement over the prior art as was demonstrated in the previously submitted Supplemental Declaration. Thus, the final temperature is not recited in the instant claims.

However, Applicants respectfully direct the Action's attention to the Examples section, wherein at most, 250 ml of a toluene solution are combined with 1000g of the support. Thus, even though irrelevant to Applicants' presently claimed invention, the resultant temperatures of the example listed in the Action would not result in a final temperature of 100 C.

In addition, as disclosed by Uwai, heating of the catalyst and the support results in a diminution of the catalyst activity such that the catalyst is rendered essentially useless. The art cannot be found to provide a suggestion or motivation for a particular action when that action renders the invention essentially useless. Thus, Uwai cannot be found to provide any motivation to heat the catalyst and the support as recited in Applicants' presently claimed invention.

"There must be a suggestion or teaching that the claimed novel form of the prior art compound could or should be prepared." *In re Cofer* (CCPA 1966) 354 F.2d 664, 148 USPQ 268, cited with approval in the unpublished decision of the CAFC in *Bristol-Myers Co. v. U.S. ITC* (CAFC 1989) [15 PQ2d 12581, and a "reasonable expectation of success." *Frifsch v. Lin* (BPAI 1991) 21 PQ2d 1739.

The Action's suggestion that mere routine experimentation was involved in arriving at Applicants' presently claimed invention overlooks the second sentence of 35 USC §103. *In re Saether* (CCPA 1974) 492 F.2d 849, 181 USPQ 36.

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"As is well established, the issue is whether the experimentation is within the teachings of the prior art" (see *In re Waymouth et al.* (CCPA 1974) 499 F.2d 1273, 182 USPQ 290). It has also been held that the fact that the prior art does not lead one skilled in the art to expect the process used to produce the claimed product would fail does not establish obviousness. *In re DOW Chemical Co.* (CAFC 1988) 837 F.2d 469, 5 PQ2d 1529. Even so, the teachings of Uwai actually suggest that heating of the catalyst and the support result in failure of the catalyst and thus Uwai provides no motivation to do so.

In a more recent decision by the Supreme Court, the Court has warned against a rigid adherence the above described "teaching, suggestion, motivation" (TSM) test. According to the Court, "when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation, but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under §103" *KSR International Co. v. Teleflex Inc. et al.*, No. 04-1350, slip op. (U.S. Apr. 30, 2007).

However, decreasing the temperature from 100°C to at most 75°C in a comparative (i.e., not preferred) method to achieve an as yet unknown result of reduced reactor fouling cannot reasonably be a results effective variable found within the "common sense" of one skilled in the art of metallocene catalyst, especially when one considers the unpredictable nature of catalysis.

It has long been established that catalysis is generally considered unpredictable merely from the chemical, nature of the catalyst. *Corona Co. v. Dovan* (USSC 1928) 276 US 358, 369. Catalytic effects are not ordinarily predictable with certainty. *In re Downcqj et al.* (CCPA 1960) 281 F.2d 215, 126 USPQ 408.

It is also well established that the known similarity between two materials may suggest the probability of the suitability of one material for a particular purpose when the other is known to be useful for that purpose. *In re West* (CCPA 1947) 160 F.2d 570, 73 USPQ 227. Thus even if the heating of the catalyst and the support could be found in the art, since doing so effectively destroys the catalyst activity, no motivation to do so is present in the reference. The effect of a modification of one prior art catalytic process in a manner employed in another prior art process

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which employs a different catalyst was held unpredictable. *Ex parte Berger et al.* (POBA 1952) 108 USPQ 236. Accordingly, Uwai fails to render the presently claimed invention obvious.

Claims 16 and 17 have been rejected under 35 USC § 103(a) as being unpatentable over Uwai, and further in view of U.S. Patent No. 5,367,037 to Lee et al. (hereinafter "Lee".)

As discussed previously, Lee fails to disclose or suggest Applicants' recited step (a) followed by step (b). Lee thus fails to cure the defects in Uwai. As such, Uwai in view of Lee fails to disclose or suggest all of Applicants' recited limitations.

Accordingly, Applicants do not recite a mere variation of temperature on a known process step in which the temperature is known to be critical, but in fact, recite an entirely separate combination of steps which the cited prior art each fail to disclose or suggest.

As such, none of the cited prior art provides any disclosure or suggestion which even remotely recognizes or suggests Applicants' discovery that the deliberate heating of the catalyst and the activator prior to contacting with the support is a critical variable which achieves a recognized result. The references merely provide for combining the two components and heating at a final temperature. Accordingly, Applicants' presently claimed invention cannot be considered an optimization of a result effective variable since no such variable existed prior to Applicants' invention. Furthermore, in the inventive Examples described in the Affidavits submitted, Applicants have shown vast improvement that are unexpected in view of the cited prior art.

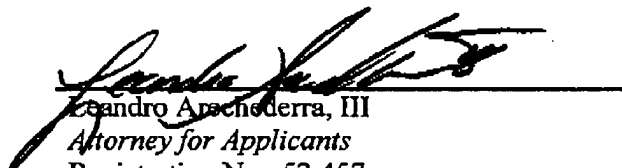
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Thus, Applicants respectfully request that all rejections be withdrawn and solicit a prompt notice of allowability. In the alternative, Applicants invite the Office to telephone the undersigned attorney if there are any other issues outstanding which have not been presented to the Office's satisfaction.

Respectfully submitted,

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Date

  
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